CLAIMS

1. (Cancelled)

2. (Previously Amended) A method for calculating a level of detail (LOD) value for use during computer graphics processing, comprising:

computing a distance value based on geometrically arranged coordinates; and

calculating a LOD value using the distance value for use during computer graphics processing;

wherein the distance value is computed based on a derivative value;

wherein the geometrically arranged coordinates include (z_0, z_1, z_2, z_3) which are representative of a quadrilateral;

wherein the derivative value is calculated using the expression $((z_1 - z_0) + (z_3 - z_2))/2$.

3. (Previously Amended) The method as recited in claim 2, wherein the geometrically arranged coordinates include (z_0, z_1, z_2, z_3) with z_0 being an upper left corner of the quadrilateral, z_1 being an upper right corner of the quadrilateral, z_2 being a lower left corner of the quadrilateral, z_3 being a lower right corner of the quadrilateral.

4. (Original) The method as recited in claim 3, wherein the quadrilateral is a 2x2 pixel quadrilateral.

5. (Cancelled)

6. (Original) The method as recited in claim 3, wherein the derivative value is a derivative with respect to an x-axis.

7. (Previously Amended) A method for calculating a level of detail (LOD) value for use during computer graphics processing, comprising:

identifying a plurality of geometrically arranged coordinates;

computing a distance value based on the geometrically arranged coordinates;

calculating a LOD value using the distance value for use during computer graphics processing; and

estimating a derivative value based on the geometrically arranged coordinates, wherein the distance value is computed based on the derivative value;

wherein the geometrically arranged coordinates include (z_0, z_1, z_2, z_3) which are representative of a quadrilateral with z_0 being an upper left corner of the quadrilateral, z_1 being an upper right corner of the quadrilateral, z_2 being a lower left corner of the quadrilateral, z_3 being a lower right corner of the quadrilateral;

wherein the derivative value is a derivative with respect to an x-axis;

wherein the derivative value is calculated using the expression $((z_1 - z_0) + (z_3 - z_2))/2$.

8. (Cancelled)

9. (Previously Amended) A method for calculating a level of detail (LOD) value for use during computer graphics processing, comprising:

identifying a plurality of geometrically arranged coordinates;

computing a distance value based on the geometrically arranged coordinates;

calculating a LOD value using the distance value for use during computer graphics processing; and

estimating a derivative value based on the geometrically arranged coordinates, wherein the distance value is computed based on the derivative value;

wherein the geometrically arranged coordinates include (z_0, z_1, z_2, z_3) which are representative of a quadrilateral with z_0 being an upper left corner of the quadrilateral, z_1 being an upper right corner of the quadrilateral, z_2 being a lower left corner of the quadrilateral, z_3 being a lower right corner of the quadrilateral;

wherein the derivative value is a derivative with respect to an y-axis;

wherein derivative value is calculated using the expression $((z_2 - z_0) + (z_3 - z_1))/2$.

10. (Cancelled)

11. (Cancelled)

12. (Cancelled)

13. (Previously Amended) A method for calculating a level of detail (LOD) value for use during computer graphics processing, comprising:

identifying a plurality of geometrically arranged coordinates;

computing a distance value based on the geometrically arranged coordinates;

calculating a LOD value using the distance value for use during computer graphics processing; and

estimating a derivative value based on the geometrically arranged coordinates, wherein the distance value is computed based on the derivative value;

wherein the LOD value is calculated for dependent textures.

14. (Currently Amended) A method for calculating a level of detail (LOD) value for use during computer graphics processing, comprising:

identifying a plurality of geometrically arranged coordinates;

computing a distance value based on the geometrically arranged coordinates; and

calculating a LOD value using the distance value for use during computer graphics processing;

wherein the LOD value is calculated for cube environment mapping which involves calculating a vector, and using the vector to index into a map selected from the group consisting of a cube map, a latitude/longitude map, and a sin(latitude)/longitude map.

15. (Previously Amended) A method for calculating a level of detail (LOD) value for use during computer graphics processing, comprising:

identifying a plurality of geometrically arranged coordinates;

computing a distance value based on the geometrically arranged coordinates;

calculating a LOD value using the distance value for use during computer graphics processing;

determining if the geometrically arranged coordinates reside on separate sides of a cube map; and

performing a coordinate space transform if the geometrically arranged coordinates reside on separate sides of the cube map.

16. (Previously Amended) A method for calculating a level of detail (LOD) value for use during computer graphics processing, comprising:
identifying a plurality of geometrically arranged coordinates;
computing a distance value based on the geometrically arranged coordinates;
calculating a LOD value using the distance value for use during computer graphics processing; and
determining if a sign of a q-value of a pixel associated with each coordinate is the same.

17. (Original) The method as recited in claim 16, and further comprising setting the LOD value to infinity if it is determined that the sign of the q-value of each pixel is not the same.

18. (Previously Amended) A method for calculating a level of detail (LOD) value for use during computer graphics processing, comprising:
identifying a plurality of geometrically arranged coordinates;
computing a distance value based on the geometrically arranged coordinates;
calculating a LOD value using the distance value for use during computer graphics processing; and
transforming the geometrically arranged coordinates to a different coordinate system (l,m,n), wherein the distance value is estimated using an expression selected from the group of $(l_1 - l_0)^2 + (m_1 - m_0)^2 + (n_1 - n_0)^2$, $(l_2 - l_0)^2 + (m_2 - m_0)^2 + (n_2 - n_0)^2$, $(l_3 - l_1)^2 + (m_3 - m_1)^2 + (n_3 - n_1)^2$, and $(l_3 - l_2)^2 + (m_3 - m_2)^2 + (n_3 - n_2)^2$.

19. (Previously Amended) A method for calculating a level of detail (LOD) value for use during computer graphics processing, comprising:
identifying a plurality of geometrically arranged coordinates;
computing a distance value based on the geometrically arranged coordinates;

calculating a LOD value using the distance value for use during computer graphics processing; and

transforming the geometrically arranged coordinates to a different coordinate system (l,m,n), wherein the distance value is estimated using an expression selected from the group of $(l_1 - l_0)^2 + (m_1 - m_0)^2 + (n_1 - n_0)^2$, $(l_2 - l_0)^2 + (m_2 - m_0)^2 + (n_2 - n_0)^2$, $(l_3 - l_1)^2 + (m_3 - m_1)^2 + (n_3 - n_1)^2$, and $(l_3 - l_2)^2 + (m_3 - m_2)^2 + (n_3 - n_2)^2$;

wherein the geometrically arranged coordinates include (z_0, z_1, z_2, z_3) which are representative of a quadrilateral with z_0 being an upper left corner of the quadrilateral, z_1 being an upper right corner of the quadrilateral, z_2 being a lower left corner of the quadrilateral, z_3 being a lower right corner of the quadrilateral.

20. (Cancelled)

21. (Cancelled)

22. (Cancelled)

23. (Cancelled)

24. (Cancelled)

25. (Previously Amended) A computer program embodied on a computer readable medium for calculating a level of detail (LOD) value for use during computer graphics processing, comprising:

a code segment for identifying a plurality of geometrically arranged coordinates;

a code segment for computing a distance value based on the geometrically arranged coordinates;

a code segment for calculating a LOD value using the distance value for use during computer graphics processing; and

a code segment for estimating a derivative value based on the geometrically arranged coordinates, wherein the distance value is computed based on the derivative value;

wherein the geometrically arranged coordinates include (z_0, z_1, z_2, z_3) which are representative of a quadrilateral with z_0 being an upper left corner of the quadrilateral, z_1 being an upper right corner of the quadrilateral, z_2 being a lower left corner of the quadrilateral, z_3 being a lower right corner of the quadrilateral;

wherein the derivative value is a derivative with respect to an x-axis;

wherein the derivative value is calculated using the expression $((z_1 - z_0) + (z_3 - z_2))/2$.

26. (Cancelled)

27. (Previously Amended) A computer program embodied on a computer readable medium for calculating a level of detail (LOD) value for use during computer graphics processing, comprising:

a code segment for identifying a plurality of geometrically arranged coordinates;

a code segment for computing a distance value based on the geometrically arranged coordinates;

a code segment for calculating a LOD value using the distance value for use during computer graphics processing; and

a code segment for estimating a derivative value based on the geometrically arranged coordinates, wherein the distance value is computed based on the derivative value;

wherein the geometrically arranged coordinates include (z_0, z_1, z_2, z_3) which are representative of a quadrilateral with z_0 being an upper left corner of the quadrilateral, z_1 being an upper right corner of the quadrilateral, z_2 being a lower left corner of the quadrilateral, z_3 being a lower right corner of the quadrilateral;

wherein the derivative value is a derivative with respect to an y-axis;

wherein derivative value is calculated using the expression $((z_2 - z_0) + (z_3 - z_1))/2$.

28. (Cancelled)

29. (Cancelled)

30. (Cancelled)

31. (Previously Amended) A computer program embodied on a computer readable medium for calculating a level of detail (LOD) value for use during computer graphics processing, comprising:

a code segment for identifying a plurality of geometrically arranged coordinates;

a code segment for computing a distance value based on the geometrically arranged coordinates; and

a code segment for calculating a LOD value using the distance value for use during computer graphics processing;

wherein the LOD value is calculated for dependent textures.

32. (Currently Amended) A computer program embodied on a computer readable medium for calculating a level of detail (LOD) value for use during computer graphics processing, comprising:

a code segment for identifying a plurality of geometrically arranged coordinates;

a code segment for computing a distance value based on the geometrically arranged coordinates; and

a code segment for calculating a LOD value using the distance value for use during computer graphics processing;

wherein the LOD value is calculated for cube environment mapping which involves calculating a vector, and using the vector to index into a map selected from the group consisting of a cube map, a latitude/longitude map, and a sin(latitude)/longitude map.

33. (Previously Amended) A computer program embodied on a computer readable medium for calculating a level of detail (LOD) value for use during computer graphics processing, comprising:

a code segment for identifying a plurality of geometrically arranged coordinates;

a code segment for computing a distance value based on the geometrically arranged coordinates;

a code segment for calculating a LOD value using the distance value for use during computer graphics processing;

a code segment for determining if the geometrically arranged coordinates reside on separate sides of a cube map; and

a code segment for performing a coordinate space transform if the geometrically arranged coordinates reside on separate sides of the cube map.

34. (Previously Amended) A computer program embodied on a computer readable medium for calculating a level of detail (LOD) value for use during computer graphics processing, comprising:

a code segment for identifying a plurality of geometrically arranged coordinates;

a code segment for computing a distance value based on the geometrically arranged coordinates;

a code segment for calculating a LOD value using the distance value for use during computer graphics processing; and

a code segment for determining if a sign of a q-value of a pixel associated with each coordinate is the same.

35. (Original) The computer program as recited in claim 34, and further comprising a code segment for setting the LOD value to infinity if it is determined that the sign of the q-value of each pixel is not the same.

36. (Cancelled)

37. (Previously Amended) A computer program embodied on a computer readable medium for calculating a level of detail (LOD) value for use during computer graphics processing, comprising:

a code segment for identifying a plurality of geometrically arranged coordinates;

a code segment for computing a distance value based on the geometrically arranged coordinates;

a code segment for calculating a LOD value using the distance value for use during computer graphics processing; and

a code segment for transforming the geometrically arranged coordinates to a different coordinate system (l,m,n), wherein the distance value is estimated using an expression selected from the group of $(l_1 - l_0)^2 + (m_1 - m_0)^2 + (n_1 - n_0)^2$, $(l_2 - l_0)^2 + (m_2 - m_0)^2 + (n_2 - n_0)^2$, $(l_3 - l_1)^2 + (m_3 - m_1)^2 + (n_3 - n_1)^2$, and $(l_3 - l_2)^2 + (m_3 - m_2)^2 + (n_3 - n_2)^2$;

wherein the geometrically arranged coordinates include (z_0, z_1, z_2, z_3) which are representative of a quadrilateral with z_0 being an upper left corner of the quadrilateral, z_1 being an upper right corner of the quadrilateral, z_2 being a lower left corner of the quadrilateral, z_3 being a lower right corner of the quadrilateral.

38. (Cancelled)